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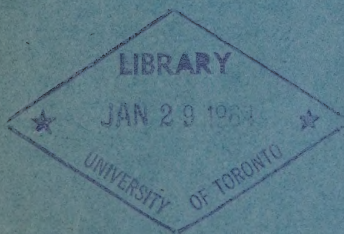




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1959

A BULLETIN ON THE SUPPLY AND DEMAND
SITUATION IN REGARD TO UNIVERSITY
GRADUATES



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BULLETIN ON THE SUPPLY AND DEMAND SITUATION

WITH REGARD TO UNIVERSITY GRADUATES

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INTRODUCTION

Since 1952 the Executive and Professional section of the National Employment Service has been publishing an annual bulletin on the supply and demand situation with regard to university graduates. Although designed primarily to assist teachers, student counsellors and others who may be called upon to advise people in the choice of a career in the professions, it has also been found useful by employers in considering labour supply and demand concerning university graduates. It has obviously served these purposes with some success, for each year the number of requests for additional copies continues to increase.

The information contained in the bulletin was obtained principally from the day-to-day operations of the Executive and Professional section of the National Employment Service and more particularly from their activities in the field of university student placement. Hence, it does not necessarily portray the entire picture with regard to supply and demand and should therefore, be read in conjunction with other sources of information.

Despite the favourable trend in the economic situation in

Canada during the past year, there has been little change in the long-term outlook for well-trained university graduates which remains good. In consequence, this bulletin does not point up many changes from last year, and from this standpoint, may seem somewhat repetitive. However, where changes in the situation have occurred or are indicated, an attempt has been made to bring the material up to date, so that counsellors and others may have the most recent information available.

INDIVIDUAL CLASSIFICATIONS

The following comments on individual professions and university courses endeavour to show the situation with regard to them in mid-1959. Shortages in some professions have existed for some considerable time and there is little change in these from previous bulletins. However, an effort is made in the following pages to point out the prospects in each profession reviewed. While some are not listed in the table of contents this does not necessarily indicate that there is little demand, but rather that there were insufficient data on hand to warrant comments.

Agriculture

Degree courses in agriculture are offered in eight Canadian universities. Although an increasing number of students have registered for these courses during the past few years, this has not as yet resulted in any appreciable increase in the number of agricultural graduates. In

1958, there were 291 in the graduating class, while this year the number is only slightly higher at 303, with 296 in their junior year who will graduate in 1960. It is thus apparent that present shortages will continue for at least a few more years.

The situation is further aggravated by the growing tendency to use agricultural graduates to a much greater extent in the rapidly expanding technological areas of agriculture. Industries such as farm supply companies, food packers and processors, etc., are seeking increasing numbers of agricultural graduates to meet these demands.

The Agricultural Institute of Canada has been endeavouring to induce a greater number of high school students to choose agriculture as a career, and no doubt the increased enrolment mentioned earlier is due at least, in part, to the efforts of this organization.

In commenting on shortages in agriculture in a recent letter to the National Employment Service, Mr. J.E. McCannel, Executive Secretary, Agricultural Institute of Canada, describes the situation in these words:

"There still continues to be an overall shortage of agricultural graduates, particularly to meet the demands in business and industrial areas. While most government agencies have been able to select graduates for their positions, there is, on the whole, a shortage which does not allow any degree of selection in making appointments."

Mr. McCannel continues,

"Unless vigorous efforts are maintained to ensure that more of the better qualified students leaving high school are encouraged to enter agriculture, there is a serious danger that there will be a severe shortage of academically qualified students to proceed with post graduate studies to fill the increasing number of positions becoming available in research classifications within the next few years."

A fair number of graduates returned to the farm, while others chose salaried positions with government departments or with private employers. Both federal and provincial Departments of Agriculture offer employment to a considerable number of graduates each year.

The federal Department of Agriculture made many new appointments during the fiscal year ending March 31, 1958, many of these being of new graduates who were appointed as agricultural research workers, livestock products graders, poultry and dairy product inspectors, fruit vegetable and plant product inspectors, and plant production officers.

Many of the positions available with the provincial Departments of Agriculture are similar to those mentioned above but, in addition, include promotional work such as the formation and operation of junior farmer groups, 4-H clubs, etc.

In industry employment opportunities occur in the fields of both

production and research, with companies engaged in farm supply, agricultural implement manufacture, food processing and distribution, and wholesale and retail trade. It is expected that their requirements will increase with further technological changes currently affecting agriculture as well as industry.

Senior positions in the occupations mentioned above, notably in the field of research, require post graduate training, and to qualify for these, students must be prepared to undertake further study leading to a Master's or Ph.D. degree.

Architecture

Architects in all parts of Canada report that they have been kept reasonably busy designing and preparing plans for all types of construction: industrial, residential, government and other public buildings. There is every indication that this activity will continue.

While the number of graduates up to and including 1960, is expected to be just over the 100 mark from the five Canadian universities offering a degree course in architecture, there are indications of a much larger graduating class in 1962. Freshmen registered for architecture in the fall of 1958 numbered approximately 220. This represents a large increase over first year classes of previous years. Drop-outs, however, may materially reduce these figures by graduation time.

The Ontario Association of Architects reports that many architectural offices across Canada have listed vacancies with them. This

indicates that any qualified architect or architectural draughtsman should not experience any difficulty in finding suitable employment. Canada has been fortunate in procuring architects from abroad and in 1958, 128 were obtained from this source. Unfortunately, during the same period, 54 architects were lost by emigration to the United States.

Arts

The general Arts course offered at all Canadian universities still attracts a larger number of students than any other course. This is probably due to the fact that completion of an Arts course provides, in itself, a good all around education and at the same time forms the foundation on which other academic courses are built - law, teaching, etc.

The Arts graduate is eagerly sought by industry and governments to fill positions requiring a good general background and ability to think and to write clearly and logically. Many junior executive positions are being filled by Arts graduates where training and experience on the job eventually lead to a responsible position with the organization. A fair number of female graduates obtain employment of this kind, as many women are attracted to the Arts course without having any intention of specializing on graduation.

The aggregate number in the graduating class increased again this year to a total of over 5,600, including honour courses, as compared with close to 5,400 last year. There are indications that the 1960 graduation will be over the 6,800 mark. Honour courses constitute around

one-fifth of the total and indicate specialization in one or more subjects, plus an extra year of study.

Wastage and drop-outs tend to reduce the number of available graduates to some considerable extent. The total seeking employment is further decreased by the large number of females who do not wish to work and by those students who register in other faculties or go on to post graduate studies.

It is not difficult to absorb the remainder, possibly around 3,000, into continuing employment in a rapidly growing country such as ours. It is significant to note that over 100 or nearly one-quarter of the entry positions advertised by the Federal Civil Service during 1959 were open to Arts graduates.

Commerce and Business Administration

Courses in Commerce and Business Administration are offered at most Canadian universities. The curriculum is designed to properly equip students to pursue a career in the field of business or public administration, including administrative posts with financial institutions, mercantile companies, public utilities, etc., and graduates are constantly sought to train for executive positions.

The Canadian Institute of Chartered Accountants in a recent letter to the National Employment Service stated,

"The field of chartered accountancy annually attracts a large number of Commerce and Business Administration graduates".

It goes on to say,

"According to our records some 20 per cent of the 1,000 students graduating in the spring of 1958 enrolled as students in chartered accountancy."

The letter continues,

"This has been the pattern for several years and it is expected to continue. Commerce graduates are naturally attracted to a field which gives them broad business experience and a professional qualification in a few short years. In addition they are given improved exemptions from the normal required period of service in accountancy courses leading to membership in the Provincial Institutes of Chartered Accountants Commerce graduates as a group have consistently obtained the highest success rate in the CA examinations."

The Institute of Chartered Accountants of Quebec corroborates this statement and adds,

"The accounting profession generally is interested in employing these graduates and, in fact, it represents a major field into which commerce graduates gravitate."

Universities from coast to coast offer this course, providing about 1,000 graduates annually. The greater number are at Laval University, McGill University, University of Montreal, University of Toronto,

University of Western Ontario, University of Saskatchewan and University of British Columbia. Graduating classes this year comprise 956 students, most of whom were in the four-year pass course with the balance in an honour course of one year longer duration. Next year's graduates are expected to number over 1,100 less wastage.

Indications point to a continuing demand for commerce graduates for some time. Openings available this year included some 92 with federal government departments. Some of these were open only to commerce graduates, while others specified commerce or other allied course.

Dentistry

While the supply and demand for dentists is stated to be reasonably in balance at present, there is no danger of over-crowding in this profession. According to a recent statistical bulletin of the Canadian Dental Association there were 5,753 practising dentists in Canada in June 1958 - a ratio of one dentist to 2,963 of population. This is slightly better than the previous year when the ratio was on to 2,984. It has been stated that the ideal ratio is one dentist to 1,500 of population but no country, as yet, has been able to reach this figure.

The province of Ontario presents the most favourable picture, for here there was one dentist for every 2,344 of population. Newfoundland showed considerable improvement at one to 9,522 with only 46 practising dentists in the province, but this is still the lowest ratio in Canada. New Brunswick with one to 4,653 and Saskatchewan with one to 4,229 are

also low, while British Columbia and Alberta with ratios of one to 2,459 and one to 2,880 respectively, are close to the national average.

Increased facilities for the training of dental students at the University of Manitoba, Dalhousie University and University of Toronto have already resulted in larger entrance classes and will eventually bring the number of graduates to well over 200 in a few years. This, however, is expected merely to keep pace with greater demands due to increasing population and the replacements made necessary by death and retirement. Immigration has little effect on the supply and demand situation for dentists. In 1958, 18 were obtained from that source but, unfortunately, this was more than offset by emigration of 19 dentists to the U.S.A.

Of the 5,753 dentists practising in Canada last year, 76 were women. Commenting on this in a recent letter to the National Employment Service, Dr. Don Gullett, Secretary, Canadian Dental Association says,

"The dental profession offers splendid opportunities for women, particularly in the field of dentistry for children. It is hard to understand why more women are not attracted to the profession. A demand exists for dental hygienists which also offers a career for women with substantial rewards."

Along more general lines, Dr. Gullett continues,

"Both the study and practice of dentistry are exacting, demanding an alertness of mind. The greatest reward lies in the rendering of an essential health service."

Engineering

Courses in engineering are offered at 18 Canadian universities, although no one university offers all specialities. However, courses in the principal branches such as civil, electrical, mechanical or chemical are available to most potential students within reasonable distance of their homes.

Students in engineering can look forward with a good deal of assurance to the availability of employment upon graduation and, in addition, to summer vacation employment related to the course of study. During the post-war years and up until two years ago, young engineer graduates frequently had several employment offers from which to choose. However, during the past few years the business recession caused a slow-down of activities and a consequent lessening in demand for engineers, and during this period, newly graduated students found it slightly more difficult to obtain initial professional employment. None the less, few engineers were out of work. Classes graduating in 1959 were absorbed into jobs without much difficulty and this situation is not likely to change materially in the foreseeable future. This forecast is based on a continuation of industrial growth and population increase and the consequent need for increased facilities requiring engineering assistance in designing, building and maintaining these new developments.

Freshmen classes in engineering at universities this fall have shown an unexpected decrease in the number of registrations. This is not

interpreted as an indication of a trend but rather as a temporary lag in expansion due to adverse developments in the aircraft industry in Canada during the past summer. The graduating class in 1960 is expected to reach 2,600, less wastage, as compared with this year's figure of 2,100.

Employment vacancies for 1959 graduates notified to the National Employment Service numbered 1,597 jobs. Civil engineers were in greatest demand, with mechanical, electrical and chemical next, in that order. The federal government required a total of 85 new graduates, made up of 45 civil, 25 electrical and 15 mechanical, for work at Ottawa and other centres. The federal Department of Labour recently conducted a survey of some 2,500 employers regarding their hirings and expected requirements of engineering and scientific personnel up to 1960, and the results of this survey have been published in bulletin form. A news release in connection with the bulletin sums up the situation with regard to engineers in these words:

"The survey showed that all segments of industry, colleges and universities and government agencies anticipated a continued increase in the employment of engineers and scientists but that the rate of increase in total employment is expected to be considerably lower than in 1957 when a peak was reached. This reduced rate of increase applied to most employers of engineers with the exception of construction and business service industries, colleges and universities and government agencies where the rates

of increase were expected to remain about the same."

The survey also showed that considerably fewer employers reported that operations or plans had been hampered by a shortage of recruits in the years 1956-57 than had been the case in the previous survey in 1956.

The survey covered a good cross section of employers of engineers, scientists and architects in Canada. It is, therefore, significant that 80.3 per cent of all hirings of such personnel during the years 1956-57 were either new graduates or experienced Canadian professional personnel. The remainder was comprised of 13.5 per cent recent immigrants already in Canada and 6.2 per cent of personnel obtained from outside the country. This speaks well for the stability of the engineering profession and serves to illustrate that there are ample opportunities in Canada for the engineer who wishes to participate in our further development.

The bulletin referred to above bears the title "Employment Outlook for Professional Personnel in Scientific and Technical Fields 1958-60" and can be obtained from the Queen's Printer for a nominal charge.

Although there is not a pronounced shortage of engineers in Canada at this time, prospects continue to be favourable, a fact which is confirmed in statements given to National Employment Service by officials of two Canadian Engineering Associations. Mr. Garnet Page, Secretary-General, Engineering Institute of Canada says, in part,

"Our experience for the first six months of 1959 indicates

that the number of men looking for work and the number of jobs looking for men seem to be very closely in balance. Vacancies listed require specialized experience and one would be tempted to predict that the demand for well qualified engineers will continue to increase during the next 12 months."

Mr. L.M. Nadeau, Secretary-Treasurer, Canadian Council of Professional Engineers has this to say,

"With the improvement in the economic situation which is presently taking place in Canada, the demand for professional engineers has increased slightly over the previous year. However, there are still a relatively small number of unemployed engineers and a larger number who, although employed, are engaged in sub-professional work or unable to find work more consistent with their training and experience."

Mr. Nadeau continues

"Nevertheless the long range prospects remain excellent and young men who possess the necessary aptitude and ability must be encouraged to study engineering and they can be assured of adequate opportunities and an excellent future in this career."

In connection with the preceding quotation, it might be appropriate to again emphasize that only those students with a demonstrated

liking for and a facility in mathematics and the sciences and who have a strong desire to become engineers should register in this difficult course. Others are likely to find the course of study too difficult and be forced to drop out for lack of the basic earlier training. For those who do graduate there should be ample opportunity for suitable employment in a profession with high monetary rewards as well as the satisfaction gained in creative effort.

Forestry

Graduates in forestry and forestry engineering find employment with lumbering companies, in the pulp and paper industry, and in the forestry departments of the Dominion and provincial governments. Employment opportunities occur in production, conservation work, or in forest research carried on by both government and private enterprise.

Two degree courses are available to students interested in the study of forestry, namely, forestry and forestry engineering. Forestry is a four-year course leading to employment as a forester or in forest management, forest business administration, forest harvesting, forest pathology and entomology, and wild life management. This course is offered at four universities: University of New Brunswick, Laval University, University of Toronto and University of British Columbia. Registrations have increased during the past few years due largely to the transfer of students and staff of the Forestry Faculty of the University of Sopron from Hungary to British Columbia, where it has been established as the Sopron Division of the University of British Columbia. This

transfer was arranged through the cooperative efforts of government, business and the university, and classes commenced in September 1957 with the first class graduating in May, 1958. It is expected that when existing classes have graduated, the Sopron Division will cease to exist at the university and, at that time, the registrations in forestry at the University of British Columbia are expected to decrease considerably. While all of the Hungarian forestry graduates were not immediately absorbed into forestry jobs, temporary employment was found and it is expected that ultimately the majority will be satisfactorily employed in forestry work.

Graduating classes in forestry at all universities number 139 as compared to 79 last year, and it is expected that next year's class will graduate about 157 including those from the Sopron Division.

While forestry is not a profession normally suited to practice by women, it is interesting to note that the Hungarian refugee student who led the class at Sopron was a 22-year-old girl.

Courses in forestry engineering are offered only at the University of British Columbia and Laval University. Increased registration at the latter university has brought the number in the graduating class this year to 35, as compared with 24 last year and a possible 47 in 1960.

There has been an increasing appreciation of the importance of utilizing and preserving the forest wealth of Canada in perpetuity. This will require a great deal of continuing effort on the part of forestry

officials. There should, therefore, be ample opportunities for all graduates in both of these forestry courses.

Geology

Almost all Canadian universities offer courses in Honour's Geology and therefore classes have remained relatively small at each centre. The 1958 class of 84 compares with 47 last year and a potential of 82 in 1960. Many of these graduates are not immediately available for continuing employment as the majority proceed to post-graduate work, while others go on to teacher-training in preparation for a teaching career.

According to the 1958 biennial survey of the Department of Labour it was forecast that there would be an increase in the requirement for geologists of 5.6 per cent annually from 1958 to 1960. The greatest demand is expected from universities and colleges and most of these employers expect that the recruiting difficulties which they encountered in 1956 and 1957 will probably be continued in the period 1958 to 1960.

The National Employment Service was advised of 49 vacancies for current year geologists and, in addition, of 6 vacancies for geologists with doctorate degrees for work with the federal government at Ottawa.

The other branch of this profession, that of geological engineering, is offered at a number of Canadian universities. In this course, as in geology, the number of students has remained relatively small. This year's graduating class numbered 53 and in 1960 will be slightly higher at 69, less wastage. The Department of Labour survey referred to earlier, forecasts a continuing demand for geological

engineers for 1958-60 but at a reduced rate from that experienced in 1957.

Summer employment is usually readily available to both graduates and under-graduate students in field work required by the federal and provincial governments. On these projects, graduates are generally used as party chiefs and students serve in various capacities with the field parties. In 1958 the Geological Survey of Canada had 76 such parties in the field engaged in obtaining basic data.

Home Economics

Despite a continued heavy enrolment in Household Science or Home Economics at Canadian universities, the supply never appears to catch up with the demand. Business, government, educational institutions and hospitals compete for graduating students each year.

Positions in dietetic work in hospitals and industrial establishments usually require an extra year as dietetic intern at an approved hospital. On successful completion of the internship the student is granted the certificate of the Canadian Dietetic Association, the recognized badge of competency in this profession.

Unfortunately, a considerable number of Home Economics graduates do not seek employment but are lost to the profession through marriage. Many of the remainder leave employment for the same reason after practising the profession for only a short time and thus create new vacancies.

Journalism

Degree courses in Journalism are offered at five Canadian universities and are designed to provide a good rounded education and, in

addition, specialized training in the presentation of facts to make interesting reading. Unfortunately, very few students avail themselves of the opportunities presented in this professional course which leads to the degree of Bachelor of Journalism. This year's graduating class numbered only 24 compared with 26 last year and there will probably be a further drop to about 20 in 1960.

Carleton University has the largest registration with 16 in this year's graduating class, and the balance are studying at Mount St. Vincent, University of King's College and the University of Western Ontario. Huron College will have two graduates in their new journalism course which will, it is expected, attract additional students from southwestern Ontario.

There are many opportunities for the graduate in the field of newspaper and magazine writing. In addition, there are many industrial and mercantile companies today which maintain public relations departments staffed by one or more officers with specialized training in writing. There are also opportunities in the field of advertising and the writing and editing of company magazines and similar house organs.

The main requirement for success in the journalistic field is probably the ability to present facts or ideas lucidly in an orderly fashion which is attractive and easily read. The field is far from being crowded and opportunities for advancement are therefore considered to be very good.

Law

Law courses at Canadian universities and Law schools prepare students for admission to private practice and also for business and government service. Entry requirements usually stipulate that students must hold a B.A., B.Sc. or B.Com. degree from a recognized university.

For some years the number of law graduates in Canada has remained around 750. After this year, however, this number should be increased to some extent by larger registrations at the University of Toronto, University of Montreal and the University of Ottawa. Queen's University will also graduate the first class in the new faculty at that university in 1960. That year will also see the graduation at Osgoode Hall Law School of 405 students in two classes of which 205 will be in the old course which is being discontinued and the balance in the new shorter course which replaces it. This year's total graduation at all schools will be near the average at 723, whereas next year's total is expected to be 953, less wastage.

The great majority of law graduates enter private practice with established firms and eventually become partners or open offices of their own. The balance go into commercial or corporation law with industrial and mercantile companies, or seek government employment. With regard to the latter, it should be noted that the federal government annually requires from 15 to 20 young lawyers for junior posts as advisory counsels with the Department of Justice or as solicitors with the Departments of National Revenue, Citizenship and Immigration, etc. The Department of

Justice also employs lawyers as combines investigation officers in their Research and Investigation Branch. Prospects for advancement beyond the entry grade are good in these fields for graduates who wish to make a career in the public service.

There does not appear to be any likelihood of an over supply of graduates in this profession.

Library Science

Library schools are operated by four Canadian universities; namely, Laval University, McGill University, University of Ottawa and University of Toronto. Bachelor degrees are granted on the successful completion of a one-year course following graduation in arts or science at a recognized university, preferably in an honours course. The degree, Master of Library Science, may be granted to students who successfully complete a course of one additional year.

There has been a pronounced shortage in the number of librarians for some considerable time and there does not appear to be any immediate relief in sight. The number of graduates each year is very small and unless there is a decided increase in enrolment in this course at the universities, the establishment of additional library facilities to keep pace with population increases will be impossible due to lack of competent staff. During a recent 12-month period, 40 librarians and archivists entered Canada, but this number was almost completely cancelled by 35 emigrations to the U.S.A. Immigration from abroad, therefore, offers little hope of relieving the situation.

In commenting on shortages, Miss Elizabeth Morton, General Secretary of the Canadian Library Association states:

"Canadian libraries need general librarians and librarians especially qualified for children's library work, cataloguing and regional library work."

Typical of the demand for librarians is that of the federal government with some 20 different departments employing almost 150 librarians of whom half are women. There were 12 vacancies this year for librarians in the entry grade open to new graduates, and the Civil Service Commission is experiencing considerable difficulty in filling these positions.

Medicine

The supply of medical graduates appears to be stabilized around the 900 mark each year. The 1959 class graduated 901 students and next year will probably be little changed. This annual addition to the profession following one or two years of internship just manages to fill the gaps caused by death and retirement. In this connection, it should perhaps be noted that retirements tend to be fewer than in most professions since aging doctors apparently prefer to restrict their activities rather than actually retire.

The only other source of supply through immigration is, largely, if not entirely, offset by emigration to the U.S.A. In 1958 Canada received 394 physicians and surgeons from abroad of whom 202 were from the United Kingdom and would in most instances be able to qualify

to practise in Canada. However, those coming from foreign countries generally require further academic training in Canada before being licenced. Since emigration to the U.S.A. alone totalled 218 physicians and surgeons, it will be readily seen that immigration fails to increase the supply of doctors but only compensates for losses due to emigration.

According to the Canadian Medical Society, the perfect ratio is one doctor to 1,000 of population and the present rate of supply appears to be fairly adequate. The National Employment Service was recently informed by the Ontario Medical Association that the supply and demand for medical graduates in Ontario were in reasonable balance.

Private practice will undoubtedly continue to attract the vast majority of medical graduates. However, a considerable number of salaried positions are available each year in hospitals and similar institutions and in various posts in federal or provincial government departments. In this regard, it might be pointed out that the Department of Veterans Affairs employs many medical officers, both specialists and general practitioners, in its numerous Treatment Hospitals across Canada; the Indian and Northern Health Service of the Department of National Health and Welfare has a number of hospitals, nursing stations and health units across the country which similarly require qualified medical practitioners; the quarantine, immigration medical, and sick mariners services of the same department also employ physicians both in Canada and in posts abroad.

Graduates in medicine need have no fear of opportunities for work, a situation which is likely to remain unchanged.

Nursing

The shortage of trained nurses which has been reported in this bulletin since its inauguration continues with no relief in sight. The yearly intake of nursing schools and hospitals stands around 3,500, but annual losses through death and retirements just about cancel out new entrants to the profession. So pronounced is this shortage, that in some instances opening of new hospitals has had to be postponed until an adequate complement of nursing staff became available.

Although hospital nursing schools are the principal source of supply, university courses in nursing annually provide about 1,000 graduates mostly through a three-year diploma course. This year there are 732 in the final year of such courses at eleven Canadian universities with a balance of 269 due to graduate from degree courses after four and one-half to five years of study and practical training. The degree course leads mainly to teaching and supervisory work in schools of nursing, public health nursing and research.

Many nurses engage in private duty nursing, while the balance take salaried jobs in hospitals, clinics and doctor's offices, industrial establishments or in the Armed Forces where nurses receive commissioned rank. There is no dearth of opportunities for employment and the nurse has many fields from which to choose. Any girl genuinely interested in nursing can be safely counselled to pursue this course.

A pamphlet entitled "Nursing Profession in Canada", issued by the Unemployment Insurance Commission, is available at any National Employment office.

Pharmacy

A four-year course in Pharmacy leading to the Degree of Bachelor of Science in Pharmacy is offered at eight universities across Canada. Graduates are in demand, not only for retail drug outlets, but also in hospital pharmacy, manufacturing pharmacy, pharmaceuticals or pharmaceutical chemistry, and opportunities for specialization in these areas is provided for in the course of studies. Post-graduate studies are required for pharmaceuticals or pharmaceutical chemistry.

The manufacturing and research divisions of drug and chemical companies employ numbers of pharmacy graduates and opportunities in government service occur in service hospitals and in some departments, such as National Health and Welfare.

In recent years the number of pharmacy graduates has remained fairly constant around the 300 mark. This year's graduating class numbered 311, whereas that of 1960 may not reach 294 after wastage. Fewer than 75 graduated from Ontario schools where the annual demand is generally around 125.

Attempts to stimulate interest in the course have been made in Ontario and elsewhere and indications are that entrance classes this fall will be considerably larger. However, even if this materializes, it will be 1963 before the supply of pharmacists can be augmented from this source. The trend to increase registrations must be continued to the point where schools of pharmacy will again graduate around 400 per year, the figure reached in the post-war years of 1953 and 1954. Without this increase the shortage of pharmacists will become even more critical than

it is today. This shortage has unquestionably played some part in the decrease in the number of retail drug stores in Ontario which has occurred during the past year, despite a considerable increase in population in the province.

Mr. J.C. Turnbull, B.S.P., Secretary Manager of the Canadian Pharmaceutical Association, commented to the National Employment Service recently as follows:

"Experience indicates an increasing demand for qualified pharmacists in many fields of research and various industrial activities, in addition to the demand for employees in retail pharmacy and hospital work."

This profession is very popular with women and the female enrolment at universities has increased since 1931 from over six per cent to about 13 per cent of the total at the present time. The shortage of pharmacists might be partly overcome if even more girls were induced to enrol in this course.

Physical Education

Nine Canadian universities offer four-year courses in either Physical Education or Physical and Health Education leading to a bachelor's degree. Further study at a provincial college of education will be necessary before being granted a certificate to teach at the secondary school level. Prospective students should have an aptitude for teaching as well as an interest in physical health, a knowledge of sports generally and a proficiency in sports activities.

The demand for graduates in this course extends almost equally to male and female students and is expected to increase in about the same proportion as the increase in secondary school attendance. In the past the number of students taking the course has not, however, followed this pattern to the extent necessary although there has been a decided increase in the 1960 graduating class, which numbers 155 compared with 118 last year. A further increase for the following year is forecast with present indications being that the graduating class will number 164, less wastage.

Prospective students of this course have the additional incentive offered by the opportunity to participate in the national effort to emphasize the value of health education and physical fitness to the youth of our country.

Pure Science

Graduate courses in the Sciences, including pathology and bacteriology, chemistry, mathematics, physics, etc., are aimed at equipping the student for a career in teaching, in the research and scientific branches of industry, hospitals and other institutions, as well as in government service. Opportunities with the federal government include numerous openings with the Department of Agriculture with work on entomology, animal and plant pathology, and chemistry and micro-biology; in biology with the Department of Northern Affairs and National Resources; and in bacteriology with the Department of National Health and Welfare. In addition, the Department of Transport in 1959 required 75 graduates in physics, mathematics and physics, or engineering physics for meteorological work.

While the pass degree in science or arts and science is the basic requirement for many jobs, this degree has limitations and the student should take the honour's course if at all possible. Post graduate work has the added advantage of enabling a student to qualify for positions of a senior nature, and many of the federal government positions mentioned above require post-graduate training.

In recent years registrations for science courses at Canadian universities has been consistently increasing. Last year's graduating class numbered 1,370. The 1959 class totalled 1,603 and next year there is a potential graduation of 1,805. It is significant that nearly one-third of the total number of students graduating this year will obtain an honour's degree, and thus have greater employment potential than those with a junior degree. Job opportunities however, have been good for both honour and pass graduates and it is expected that this situation will continue in our expanding economy.

Social Work

Courses in Social Work leading to a bachelor or master's degree are offered at eight universities in Canada, which graduate approximately 300 students per year. This year 175 were taking the work of the junior degree while 145 were studying for the M.S.W. degree. Since senior positions in this profession usually require the M.S.W. degree, many social workers with bachelor's degrees return each year to university for post-graduate work.

At present there are many more openings than qualified applicants. The increase, both in population and appreciation of the value of social work in hospitals and other institutions, has created a pronounced shortage of trained workers. In addition, there is considerable demand from government sources. In the Department of Veterans Affairs, social workers assist in counselling veterans as well as serving in advisory capacities to other staff members. In the Department of National Health and Welfare they take part in the administration of Family Allowances and Old Age Security Legislation. Considerable work is also done with Indians and Eskimos through the Departments of Citizenship and Immigration and Northern Affairs and National Resources.

This profession is open to both men and women and orders for social workers received by the National Employment Service usually specify either male or female.

Mature persons with emotional stability and a capacity for objectivity are best suited to work of this nature.

Therapy - Occupational and Physical

Physical and Occupational Therapists work under the direction of the medical profession in the diagnosis and treatment of disease and injury through the use of physical agents. In physiotherapy, these agents are usually electricity, water, heat, cold, exercise and massage. Occupational therapy is the treatment of injury or disease by means of prescribed activities which are generally designed to capture the interest of the patient and thus enlist his co-operation in the process.

Four Canadian universities, namely, McGill University, University of Montreal, University of Alberta and University of Toronto offer courses in physical and occupational therapy. It is expected that the University of Manitoba will add this course probably in the fall of 1960. The 1959 graduating class numbered 95 but next spring it is anticipated that 119 students will graduate. These figures fall far short of meeting the demand and the entry of the University of Manitoba to this field will be most welcome although no class will graduate from that school before 1964.

Females greatly outnumber males in these courses since at all universities registration is confined to females with the exception of one university where male registration is restricted to a small percentage of the total enrolment. As stated earlier, opportunities for employment are plentiful and occur in hospitals, medical clinics, social and welfare agencies, in industry and with the Armed Forces. In the Armed Services, therapists serve as commissioned officers.

In the federal government, occupational therapists are employed at DVA Treatment Hospitals located in major cities from coast to coast and in Indian Health Service Hospitals at five locations in Ontario, Alberta and British Columbia, for the treatment of Indians and Eskimos. Physiotherapists are also employed by both the Department of Veterans Affairs and the Department of National Health and Welfare. As in the medical profession and in nursing, the therapist derives considerable satisfaction from the certain knowledge that the practice of this

profession contributes greatly to the welfare and comfort of suffering humanity.

Teaching

Despite the annual inflow of new teachers to rural and urban schools at both the elementary and secondary levels, the shortage continues to be chronic. Losses to the profession through retirement and marriage of female teachers, combined with a rapid increase in school population, present a yearly replacement problem to every school board.

The problem is not entirely numerical shortage but also one of a shortage of qualified teachers. Despite recent emphasis on this latter phase of the problem, the situation regarding teaching qualification may even have deteriorated somewhat rather than shown improvement. According to the Canadian Teachers Federation the number of teachers with permits, indicating incomplete training, in 1939 comprised 2.7 per cent of the total number of teachers, whereas this group now forms 7.6 per cent. The associations are doing their best to draw public attention to the matter in an endeavour to raise the standards for teachers with the ultimate objective of having all teachers qualified by university graduation or acceptable equivalent.

The Canadian Teachers Federation at its annual convention in Halifax in August 1959 set the objective for minimum qualifications at four years of study beyond junior matriculation.

The 1958 Canadian Conference on Education passed a resolution along the same lines reading as follows:

"Be it resolved that candidates for entrance to the teaching profession should be required to have completed senior matriculation or the equivalent, and that the required academic professional preparation should be established immediately at a minimum of two additional years with a view to the adoption in the near future of a minimum of four years of academic and professional study, and that permanent teaching certificates or diplomas be granted only to persons who have met these standards."

The reader is referred for additional information on this subject to Bulletin No. 58-2, dated December 1958, issued by the Research Division, Canadian Teachers Federation.

Prospective teaching students should be counselled to continue their education with this end in view so that they may be properly qualified as and when the above recommendations are accepted and become effective in the various provinces.

Veterinarians

The practice of Veterinary Science probably provides the new graduate with more employment opportunities than any other course.

Two colleges in Canada, namely, Ontario Veterinary College and the University of Montreal offer courses in veterinary science.

The graduating class in 1959 consisted of only 68 students but present indications are for a small increase next year with a potential of 75, less wastage.

These figures are not sufficient to take care of losses to the profession due to death, retirement and emigration. In 1958, Canada received 27 veterinarians from immigration and during the same period lost 7 by emigration to the U.S.A.

Private practice appears to have the widest appeal to graduates. However, there are a variety of opportunities available with federal, provincial and municipal governments where the veterinarian may be employed on meat inspection and the control and eradication of infectious diseases among livestock. Vacancies also occur in various public health programs, especially those related to milk and meat products. Research involving scientific investigation of animal diseases also affords excellent opportunities for the graduate whose interest lies in this area. The student choosing this type of work should be prepared to undertake post-graduate study if he intends to make a career of research. Teaching in veterinary or agricultural colleges is also a field which attracts many girls.

Girls are showing an increasing interest in this profession which offers excellent opportunities to both male and female veterinarians. In this connection, it is interesting to note that two married couples were in the graduating class at MacDonald College last spring.

GENERAL COMMENTS

Comments on the professions reviewed briefly in the foregoing pages indicate a continuing demand for university graduates. Our rapidly

expanding economy and the increase in population ensures that the demand will continue.

University registrations have been increasing year by year since 1952 when they reached a post-war low after the tremendous influx of veteran students following the end of the war. Total registrations last year were about 94,000 and this year the figure is expected to be somewhat over 100,000. The largest university, University of Toronto, alone expects to have 23,000 students register in 1968, an increase of about 64 per cent in less than 10 years. Other universities are endeavouring to keep pace with the increased demand for higher education by providing increased facilities and most have expansion programs underway which will result in new buildings appearing at practically all universities and colleges within the next few years.

The federal government, through the Civil Service Commission, reported requirements at the end of the 1958-59 academic year for about 600 graduates for continuing jobs and 1,200 under-graduates for summer work. More applications were received for these jobs, both absolutely and proportionately, than at any time since World War II. About 900 persons wrote the general examination for university graduates, which provides a good indication of the competition for these positions. In addition 600 graduating students in civil; electrical and mechanical engineering wrote the qualifying examinations for jobs in these categories, despite the fact that this was the first year in which written examinations were held by the Commission.

Assistance to needy university students in undertaking and completing studies takes the form of Scholarships and Fellowships, as well as Special Awards to cover specific projects. These come from a variety of sources, both public and private, and while this help is considerable it is far from adequate to meet the demand. Financial problems facing many students have been aggravated by increasing costs, including a rise in university fees along with additional expenses, as indicated by increases in the consumers price index.

It is highly desirable that all worthy students who are university material should be assisted, if necessary, to enter a course leading to one of the professions and have reasonable assurance of being able to continue on to graduation. Several of the provinces have introduced schemes to assist needy students. As an example, the province of British Columbia now pays one-half of the fees of the most talented students and one-third of the fees of the top 2,000 high school graduates with Second Class Honours. Another new plan, that of the Ontario Government, will be available as a result of the gift to Her Majesty, the Queen, of a \$500,000 Scholarship fund in her name.

The assistance of professional associations in providing some of the statistical and factual information in this bulletin is gratefully acknowledged.

December, 1959

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